BAROMETRIC INDICES OF THE CONDITION OF TRADE

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Statistics are divided into two classes, viz.: Comparative Statistics and Fundamental Statistics.

(1) *Comparative Statistics as Indices*

So far as the merchant is concerned, comparative statistics relate to the weight, quality, age and method of manufacture of the merchandise in which he deals, together with such "trade figures" as are published in the trade journals.

From the investor's point of view, comparative statistics include all particulars concerning the bonded debt, the earnings, and the general physical and financial condition of properties. Such statistics are very necessary to bankers and investors for comparing similar securities of different companies, or different securities of the same company. If such data is always up to date, such comparative statistics are very valuable for enabling one to select safe securities, either for permanent investment or for buying and selling again. As the largest and most successful stock exchange brokers, bond houses and mercantile firms, are already well supplied with comparative statistics and are obtaining excellent results, we need not here discuss details concerning this class. It should be clearly understood, however, that such statistics are worthless for determining the general course of the entire market or for serving as barometric indices of the condition of trade.

Comparative statistics determine only actual values, enabling one to select safe securities or good merchandise, or to select the better of two or more companies' securities, or grades of merchandise. With the general market conditions remaining fixed, comparative statistics might be used for forecasting a rise or a decline; but the general market is so seldom stable that comparative statistics cannot be depended upon to serve this purpose. They have been brought into disrepute at times because of the fact that

they are inadequate for analyzing general conditions. The market value of securities or merchandise may continually decline, and the actual value of the same increase, or vice versâ.

Whoever bases either purchases or sales solely upon earnings, physical conditions or other comparative statistics, *with the idea of selling at a profit,* will surely lose money. Such statistics may be used for selecting a safe investment or good merchandise, such as one may desire to hold permanently; but they are absolutely worthless for any other purpose. It is because this fact is not being recognized by many firms, content with accumulating only comparative statistics, that even with their elaborate statistical departments, they are often on the losing side. In short, these statistics are for studying only surface conditions, or, more strictly speaking, past conditions, and, therefore, are useless for the purposes of our subject.

(2) *Fundamental Statistics as Indices*

Fundamental statistics relate to underlying conditions of the country and make it possible to forecast demand, supply, money conditions, etc. Fundamental statistics, although now used by only the most careful investors and merchants, are by far the most necessary and profitable. All financial history has consisted of distinct cycles, and, although of different durations, each cycle has consisted of four distinct periods; namely, 1. A Period of Prosperity. 2. A Period of Decline. 3. A Period of Depression. 4. A Period of Improvement.

Moreover, the laws of nature, commerce and industry determine that these cycles shall always consist of four distinct periods. The idea that prosperity can ever become permanent and will not be followed always by a business depression, or the idea that there can be an unlimited period of depression without succeeding general activity and high market prices, shows both ignorance of economics and utter inexperience in the business world.

Theoretically, there should be a state where everybody is prosperous and nobody overtrades, where the cost of living is reasonable, and the wage-earner has a margin to save for old age or establish a higher standard of comfort. It is true that we have never so far seen a condition so equable. The record of crises and booms can be carried back beyond the history of this country, and we can

start from the opening years of the eighteenth century, when William of Orange was on the English throne. We can trace a commercial cycle once in five to ten years, and we can carry the study into the last century, knowing that European conditions were exactly reflected on this side of the Atlantic.

"A state of equilibrium is apparently the most difficult of all for the world's trade to maintain. We can theorize about crops, consumption, capital, labor and a score of other factors, but human nature is, after all, at once the least stable and the most unchangeable factor of them all. Business may be quietly good, but that ambition to which we probably owe also the greater part of the world's progress insists upon forcing it beyond reasonable capacity. The result is always the same. The result of years of saving is overconfidence, inflation, waste, conversion of floating wealth into fixed wealth, and, finally, collapse and panic. Here is the plain evidence of two hundred years, and, it may be assumed, at no risk that it is the evidence of all commercial systems. Joseph with his seven fat years and his seven lean years expressed nothing more.

"What is not so readily realized is that a panic is followed by rapid recovery in stock prices, and one slower, but still relatively quick, in general business. This again is followed by an arrest in business where, contrary to assumptions just as hasty and ill-balanced as those which cause a bear attitude on a panic break, boom conditions are not immediately restored, nor does anything of the kind develop within a year or so of the crisis. The first recovery runs too far and has always run too far. What follows is not collapse, but dullness. It becomes imperative to make real savings in order to build up for the next boom in business."

A list of twenty-five subjects about which merchants and investors systematically collect, analyze and index statistics is given in Chapter IV of my book on *Business Barometers*. These are the subjects studied by the oldest, richest and most conservative financial and mercantile houses of the world, for determining which of the above-mentioned periods the country is experiencing or is about to enter at any given time. The use of fundamental statistics eliminates all guessing and uncertainty concerning mercantile and market movements and gives a barometric index of conditions of trade.

The only requirement is to collect, tabulate and study the weekly and monthly figures as they are received. These plainly

show whether the general tendency of a market is upward or downward, and whether it is the time to buy, or to sell, or to do neither. As above stated, these fundamental statistics are even more important than comparative statistics. Not only are the latter of little value, unless supplemented by these fundamental statistics, but experience has shown that such investors as have confined their operations to standard securities, and such merchants as have bought standard goods, have made fortunes for themselves and their customers by a study of these fundamental statistics exclusively.

The ablest bankers, merchants and investors collect data under twelve headings, or on about twenty-five subjects, as follows:

I. Building and Real Estate: (1) Including all new building and fire losses.

II. Bank Clearings: (2) Total bank clearings. (3) Bank clearings excluding New York.

III. Business Failures: (4) Failures, by number, amount of liabilities and percentage of failures to number of firms in business.

IV. Labor Conditions: (5) Immigration figures.

V. Money Conditions: (6) Money in circulation. (7) Comptroller's reports. (8) Loans of the banks. (9) Cash held by the banks. (10) Deposits of banks. (11) Surplus reserve of banks.

VI. Foreign Trade: (12) Imports. (13) Exports. (14) Balance of trade.

VII. Gold Movements: (15) Gold exports and imports. (16) Domestic and foreign exchange and money rates.

VIII. Commodity Prices: (17) Production of gold. (18) Commodity prices.

IX. Investment Market: (19) Stock exchange transactions. (20) New securities.

X. Condition of Crops: (21) Crop conditions and production of other commodities.

XI. Railroad Earnings: (22) Gross and net earnings. (23) Idle car figures. (24) Miscellaneous.

XII. Social Conditions: (25) Political factors.

These twelve main subjects have by custom come to be known among merchants as the twelve barometric indices of the condition of trade, and may be briefly described as follows:

I. The number of miles of new railroad constructed, together with figures on building statistics, gives a clew to what new con-

struction is going on throughout the country. The exactness with which business conditions could have been foretold in the past by such figures is truly marvelous. It may be stated also that as iron is one of the first commodities to fall in price, and one of the first to rise, all merchants watch the price of iron as an index of the amount of steel in demand, and, therefore, as a barometer of actual conditions.

II. Bank clearings are an extremely good barometer of present conditions, and are watched with keen interest by all successful merchants and manufacturers. Many large corporations each week compare the changes in their total sales with the changes in the total bank clearings of the country. If they find that bank clearings continually show an increase, while their sales remain fixed, they immediately try to discover the reason therefor. Moreover, some firms divide the country into sections, and compare by sections their sales with the bank clearings for said sections, thus having a check on the work of each individual sales office.

III. Failures, both in number and amount, are especially good barometers of the conditions of trade. By ascertaining each month the average number of concerns in active business, and the number that have failed, the percentage of failures may be readily determined. Contrary to the ordinary impression, too few failures foretell disaster and panic.

IV. Figures on immigration are carefully studied by manufacturers as indicative of the conditions of the labor market. Thousands of immigrants arriving at Ellis Island indicate good surface conditions, with high prices for labor; but too large immigration figures foretell a change in conditions, followed by a period of depression. On the other hand, when large numbers of steerage passengers are leaving the country, and the incoming steerage is reduced, business is in a state of depression, although when the tide turns and immigrants again begin to arrive, it is a sign that conditions are again improving.

V. Money is the basis of all trade, and is, therefore, probably the most sensitive of all barometers. Money is the representative in value of all things traded in, and the scarcity of it seriously hampers the manufacturer and the merchant. Low money rates usually indicate poor present conditions, but tending toward improved business; while high rates usually signify very prosperous

present conditions, but often foretell a coming panic. The active merchant, moreover, not only studies the money rates of this country, but also the average of the bank rates of England, France and Germany. Each Thursday the Bank of England publishes a statement, and makes an announcement as to the rates of discount at which it will handle first-class paper until further notice. This practically fixes the discount rate throughout Great Britain, and a continued increase or decrease of the rate in England is sure to be followed eventually by a similar movement in this country.

VI. Figures on foreign trade are also of great value. The foreign trade of the country bears the same relation to the nation, as a whole, as the income and expense of an individual bear to the financial condition of the said individual. A man who for any length of time spends more money than he receives, is sure to eventually have trouble, and it is the same with the nation. Moreover, as the financial prosperity of the individual is almost in direct proportion to his net income, so the prosperity of a nation very largely depends upon the volume of its foreign trade.

VII. Monthly gold movements are also important for study in forecasting money rates, although, like idle car figures, they are of little value after the actual annual figures are published.

VIII. The subject of commodity prices is very important. The amount of money required to carry on a definite volume of business becomes very much greater as business increases. For this reason, bankers very carefully watch commodity prices, knowing that high money rates invariably follow a marked increase in commodity prices.

IX. The number of transactions and the prices of stocks on the New York Stock Exchange are also interesting to merchants, as well as to investors. The way money is made on the New York Stock Exchange is by anticipating price changes. The leading operators have statisticians continually studying fundamental conditions, in order to forecast future conditions and base their purchases and sales on the information obtained. Therefore, a slowly sagging market usually means that the ablest speculators expect in the near future a decline in general business; while a slowly rising market usually means that prosperous business conditions may be expected, *unless the decline or rise is artificial and caused by manipulation.* In fact, if it were not for manipulation, merchants could

almost rely on the stock market alone as a barometer, and let these large market operators stand the expense of collecting the data necessary for determining conditions. Unfortunately, however, it is impossible to distinguish between artificial movements and natural movements by studying the stock market alone, therefore, although bankers and merchants may watch the stock market as *one* of the barometers, they should give to it only a fair and proportional amount of weight.

X. Of all statistics published by the government, the most important to the merchant are crop reports. Most of the government figures refer to what has happened in the past, and many of these figures are published a year or more after the events have happened. In the case of the crops, however, the government actually forecasts. Therefore, all crop statistics are especially valuable to manufacturers and merchants.

The crops are the mainstay of America, and approximately one-half of our population is directly dependent upon agriculture. Crop conditions form the basis of James J. Hill's predictions and business ventures, and Mr. Hill, by the way, is a great student of fundamental statistics. The principal crops, grain and cotton, have a tremendous influence upon our wealth. Many industries and mercantile firms are absolutely dependent on the crops, and commodity prices are always more or less dependent thereon. The grain and cotton reports issued by the government are watched with great interest, and manufacturers and merchants even watch the weather reports throughout the West, the progress of the "green-bug," the condition of the crops in the Argentine Republic, Russia and other countries. Normal crops are usually followed by a year of uncertain conditions.

XI. Railroad earnings are extremely instructive and are used by some merchants in preference to many of the above subjects. Practically all manufactured goods, and even supplies in the local retail stores, are shipped by railroads; therefore, a weekly record of freight which the railroads are carrying serves as a barometer of the business of all the farmers, manufacturers and merchants of the country. Moreover, the steel companies, the car and the locomotive builders, the coal industry and many other industries are directly dependent on the railroads for their prosperity. Therefore, all merchants watch railroad earnings and new mileage constructed, and

always reduce or increase their stock of goods in accordance with what these reports show.

XII. Political factors. Trade is always dependent upon the wise conduct of our national government. War clouds, even although at first not involving our nation, strongly affect all commodity and investment prices. Of course, all are not affected in the same way, as a war scare increases the prices of some commodities and reduces the prices of others; but all are affected in some way and to some extent. Even the President's message, and especially tariff discussion and the approach of a presidential election, greatly affect prices and trade.

To conclude, each of these twelve subjects is intimately bound up with what are known as "swings," during which all prices change from "high" to "low" and the reverse. As heretofore stated, all financial and commercial trade during the past two hundred years has been divided into distinct cycles, and each cycle consists of four periods: a period of prosperity, a period of decline, a period of depression and a period of improvement. Each period is accompanied by distinct changes in the prices of stocks, labor and commodities, and, by comparison with similar periods in previous cycles, it is possible with a degree of certainty to determine at about what period in one of these "swings" we happen to be. If the swing is far out over the perpendicular, we are sure that the pendulum must swing back of the center as far as it swung forward, because action and reaction are always equal where the "area" consumed is considered.

No country, however, can be prosperous unless it is progressive. No nation can stand still; it must go either forward or backward. The normal demands of our country for new construction must show an increase each year to have conditions even remain constant. There must be a distinct increase in order to keep the vast number of our new citizens busy. Therefore, in comparing the present with the past, equal or slightly greater figures do not necessarily mean better conditions; but in many instances may mean an actual falling off. This is very important and must be remembered when estimating an area to use for comparative purposes in connection with the composite plot which will be described later.

Some firms, when interpreting figures on each of the various subjects for surface conditions, prefer each month to determine

what the proper normal figure should be for each of these subjects, and note the relation between the actual figures for surface conditions and these normal figures. The normal figure on any one subject is obtained by plotting the yearly figures on that subject for a period of ten or twenty years, and by drawing on that plot a line showing the average trend for the entire period. Firms using this system obtain the normal figure for any future time, assuming that the general direction of this normal line will continue the same. Moreover, in the case of some subjects, it is often clearer to plot the *relation of present figures to a ten-year average,* rather than the actual figures. This is especially true with plotting commodity prices and other figures which show only a slight variation with seasonal changes.

The amount of money which can be made by the study of such statistics is limited only by the original capital and the number of years the study is continued. Comparative statistics treat of comparative conditions, and are used for selecting securities and commodities which are absolutely safe and which have the greatest prospect of increase in market value under fixed market conditions. Fundamental statistics treat of underlying conditions and are employed as barometric indices for determining these general market conditions and whether or not it is wise to purchase or to sell, or to do neither. Investors use their indices in order to purchase securities only when they are low, holding them for from two to four years until they are high, and then selling and depositing in a bank the proceeds received therefrom. After said sale, they leave the money on deposit for from two to four years, until the same securities again sell low, when they withdraw the money and again purchase them or other high-grade securities.[1]

Many such investors triple their money about every five years, with very little risk and with little trouble. By a study of fundamental statistics some individuals, with equally little risk and without any marginal purchases, but by purchasing outright, high-grade, dividend-paying securities, have turned an investment of $5,000 to $250,000 in about twenty years. When one realizes the meaning

[1] If this withdrawal at the time of a panic meant the hoarding of money, taking the money from circulation, we should not recommend any such course. Instead, the money is only withdrawn from one bank and deposited in another, probably being used to liquidate some loan.

of this—that an investment of $20,000 grows to $1,000,000 within twenty years—the value of fundamental statistics is apparent.

Merchants who never buy or sell securities use this data with equal profit. Fundamental statistics clearly show the merchant when to buy and increase his stock of goods, and when to cut prices and reduce his stock. They also enable the merchants to forecast money conditions in order that they may intelligently decide whether to borrow the money necessary to allow customers further credit, or to reduce their own loans and the indebtedness of customers. Moreover, at all times these figures show a merchant the conditions of business throughout the country, so that he always knows whether the growth or contraction of his business is proportional to that of his competitors.

Upon careful thought it is evident that the fortunes of American merchant princes must have been created by a study of these barometric indices, rather than by simple selling to the trade at a nominal profit. Therefore, not only does the proper use of fundamental statistics insure a merchant against losses, but their use should be almost as profitable to him as to the investor, enabling him to double and triple his capital every few years.

The Theory Involved

Up to the present point this paper has outlined what is meant by fundamental statistics and the great value of such statistics to bankers, merchants and investors. The purpose is to show why the subjects mentioned are studied and what evidence we have for using the laws upon which our barometric indices are based.

That there have always been periods of depression and periods of prosperity and intermediate periods, every one already knows. There is absolutely no dispute regarding this first point, but opinions distinctly differ as to the duration of these periods. It is the general impression that the great major cycles are of about twenty years' duration, and the minor cycles extend over about ten years, with possibly intermediate cycles of about five years' duration. Probably the most interesting work on this subject was done by Samuel Benner from 1875 to 1884, who formulated a most elaborate system of charts and who, without doubt, clearly foretold the panics of 1884 and 1893, and the prosperous years intervening. Many other men have devised other charts and theories—some based on sup-

posed economics and others based on superstition—but all have been found to fail and have passed into oblivion.

Upon careful examination, however, all these charts and theories have two great defects, and it is only because the laws which we discuss here eliminate these two defects that this paper deserves attention.

Reaction Equals Action

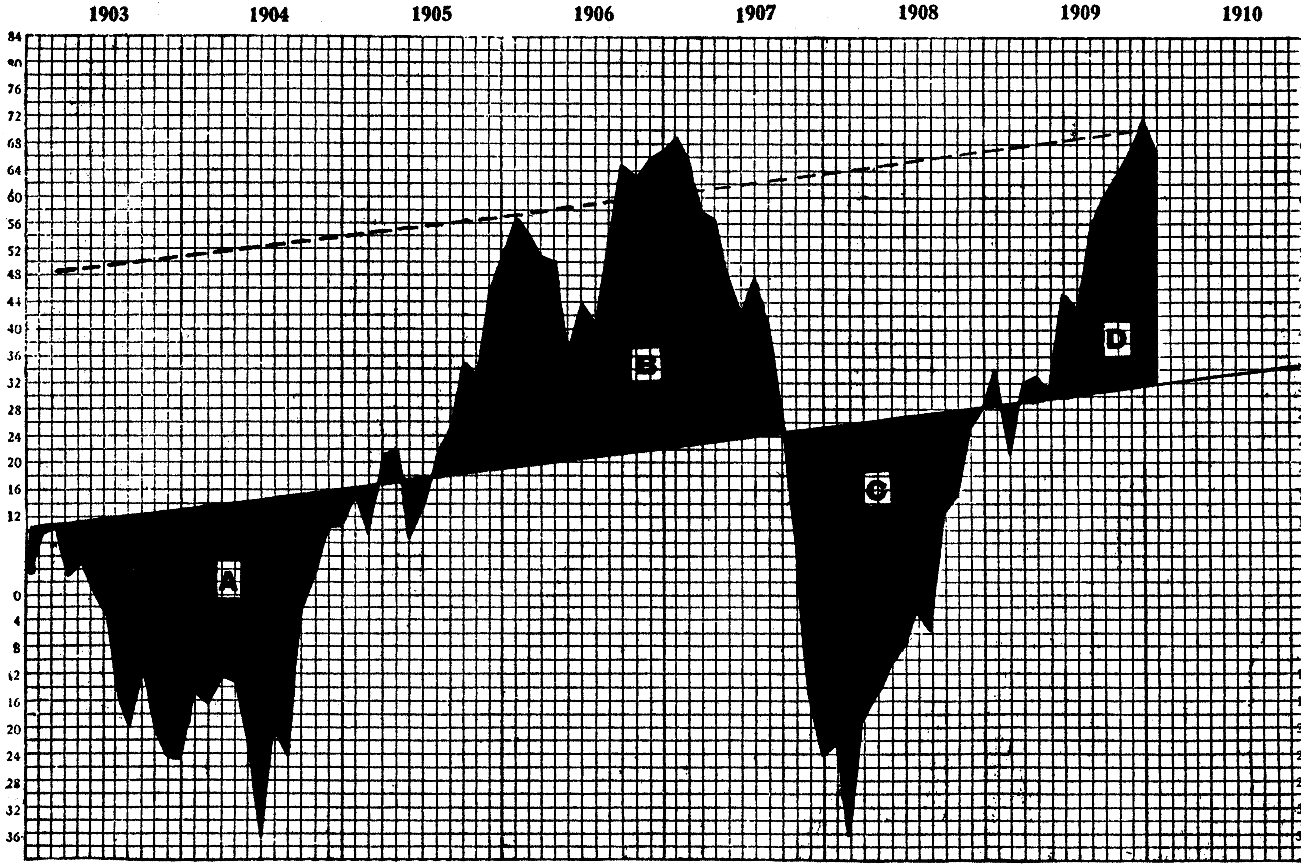
The first defect in the old theory of Benner and other writers consisted in the fact that they based their calculations on either time or activity, separately, instead of on their product. There is no law in physics or nature stating that any action or any reaction must come with any definite regularity. The law upon which mechanics, medicine and other sciences are based is that "action and reaction are equal." This is absolutely true; but when a mechanic or physician or any one else attempts to go one step further, he fails completely. Action and reaction are equal; but of what "reaction" consists, there is no known law to determine. For instance, we may say that certain reaction amounts to one hundred foot-pounds. But whether the body weighs one hundred pounds and is moved one foot, or weighs only one pound and is moved one hundred feet, we have no way of knowing.

In other words, to say that a period of prosperity or a period of depression will last any given time—irrespective of the business activity of the country during such time—is contrary to all basic law. Yet upon such reasoning most of our predecessors have worked, while the others believed that a change in conditions comes when figures for pig iron, bank clearings or commodity prices reach a certain point. They entirely ignore the product of time and activity. Yet only by multiplying one by the other can the true "reaction" be ascertained. Time may be compared to space, and activity may be compared to weight, and their product to space multiplied by weight or "foot-pounds."

For this reason, when studying a composite plot like the annexed, which is based on all the twelve main subjects heretofore mentioned, able bankers and merchants to-day do not study height nor length, but simply area. Or, to refer again to this composite plot, such men believe that the shaded areas above the average line must approximately equal in area the shaded areas below the aver-

Composite Plot of the Actual Barometer Figures for Surface Conditions

NOTE: If action and reaction are equal, an area at D equivalent approximately to the area A, B or C must be consumed before another depression. In other words, if the plot of the new Summary Barometer Figures rapidly works upwards, prosperous conditions will last only a year or two; but if the figures remain constant, thus giving a horizontal line, prosperous conditions may last several years. Also, it should be remembered that, although manufacturers and merchants can count on good business during the entire area, yet the stock market usually turns before one-half of the area is consumed and the bond market when about one-fifth or one quarter is consumed.



age line. Therefore, if the country is enjoying a condition of only medium activity, prosperous conditions may be expected to extend over a longer time than if tremendous prosperity now abounded, and vice versâ. Leading bankers, merchants and investors, therefore, collect data on all these subjects in order to keep always informed as to the area being consumed, which is the first and most important step in forecasting future mercantile, monetary and investment conditions.

All Subjects Must Be Considered

The second great error heretofore made by these economists consisted in the fact that each man seemed to focus his attention on only one or two subjects, instead of making a composite interpretation of all. Some would study bank clearings, some foreign trade, others gold movements, and so on, believing that, as the figures on their especial subject or subjects changed, it was possible to forecast future conditions. Many still believe it is possible to follow certain other subjects in this way; but all such systems are absolutely mistaken. No one of these subjects, when studied independently, serves to foretell the great changes in conditions which have occurred since 1860. Some of the subjects seem to work out better than others; but all of them entirely fail to give proper warning in some one instance.

For illustration, gold movements formerly were used as one of the very best barometers of future conditions. During heavy imports of gold, such as occurred in 1878-1882, the United States enjoyed unparalleled prosperity, and after said imports declined, and the exports of gold exceeded the imports, as in 1882-1883, there followed the panic of 1884. This same rule worked most admirably in forecasting the prosperous times of 1888-1890, again the panic of 1893, and again the prosperous times of 1898-1902. The rule, however, did not work well in forecasting the panic of 1903, nor the prosperous years following; while the heaviest imports of gold the United States ever enjoyed occurred just preceding the panic of 1907. Of course, the reason for these huge imports in 1906-1907 is now well understood; but any one who in 1906 studied the bare figures, without knowing that such importations were artificial, would have been justified in expecting 1907-1908 to be years of great prosperity. On the other hand, such an error would not have been

possible if a study had simultaneously been made of the other leading subjects.

In short, a study of all these subjects reveals the fact that no one of them can always be depended upon; but that in the case of every panic, or other change in business conditions, some one or more of the subjects fail to give the necessary warning. *On the other hand, such study has shown that there has not been a single case when a change in conditions has not been fully and plainly foretold by a majority of all the subjects.* If one will study the figures or plots which treat of the twelve or more most important of subjects, the following facts are self-evident:

Four general rules can be worked out for each subject—one rule for each of the four periods of prosperity, decline, depression and improvement, respectively. These rules are given in detail for each of the twenty-five subjects, in Chapters VI, VII and VIII of my book, *Business Barometers.* The basis of these rules is that such very high figures as appear during very prosperous conditions foretell a panic or period of decline; when the high point is passed and the plot points downward, as occurs during a decline, a period of depression may be expected; very low figures, such as appear during a depression, foretell a period of improvement; and when the low point is passed and the plots turn upward, as occurs during a period of improvement, prosperous conditions again may be expected.

Although bankers and merchants may often rely upon what *one* of these subjects signifies, yet it is never safe to do so. On the other hand, it is safe always to depend upon what the majority of the subjects signify. That is, if during prosperous times we are studying twenty-five subjects, and more than fourteen signify either "no further improvement" or "caution," then we may begin to prepare for trouble which is sure to follow. Conversely, if during a business depression fourteen of the twenty-five subjects foretell "improvement," then improvement will surely follow.

Final Deduction

Therefore, after reducing all figures to a single composite plot, in order to ascertain the "area" above or below the average line, the figures are again referred to and interpreted as to underlying conditions in accordance with the laws just outlined, which laws

are self-evident from a study of the charts and figures. If both the composite plot and the interpretations foretell the same change, it may be expected to come to pass; while if both do not foretell the same change, one may assume that at a given moment conditions are uncertain, although a week or so later this uncertainty may not exist. This practically completes the work, although as a further check, it is interesting to look back over previous history and ascertain what changes, after such conditions as exist to-day, have followed in the past. This is accomplished by referring to points in the various past business cycles when (1) the same area above or below the average line existed as exists to-day; and (2) when a majority of the twenty-five subjects foretold according to the above rules the same that they foretell to-day.

In short, the study of these barometric indices for studying trade conditions consists simply in ascertaining present surface conditions and interpreting them with the view of forecasting future conditions. In many ways the work resembles the work of a physician. A man goes to his physician to be examined for life insurance and the physician first obtains a knowledge of the man's present condition by an examination of his pulse, temperature, kidneys, respiration, etc. The physician secondly refers to his medical library and ascertains what usually follows when a man's heart, kidneys, lungs, etc., are in such a condition as the patient's, and thus interprets these symptoms. The physician thirdly combines his knowledge of the man, his present condition, his mode of life and his symptoms, and forecasts for the insurance company the length of time—in his opinion, based on previous history—the man has to live. That action and reaction are equal, and that history usually repeats itself, is the foundation of the science of medicine, and upon such a foundation the great business of life insurance is absolutely dependent. The person who believes there is nothing to the science of medicine, and that any average man knows as much and can advise as well about his bodily condition as a highly trained physician, is not expected to be a believer in fundamental statistics. On the other hand, one who does have faith in the knowledge and advice of an able physician should give this subject most careful respect and attention.

The Mechanical Work

In the first portion of this article we studied the meaning of barometric indices and their use; this was followed by a study of the theory underlying the work and the reasons why indices can be depended upon. At this point space may be given to explaining the mechanical work of compiling and reducing these figures to one single "summary barometer index figure" such as is the basis of the above-mentioned composite plot.

In approaching this part of the work, although other methods may seem sufficient, the need of direct and definite results leads the student to seek a systematic, comprehensive and uniform practice, so that a basis of comparison, from period to period, may be established at the outset. The course usually followed by the leading bankers, merchants and investors is to collect data, covering a long period of years, and relating to the twenty-five or more subjects compiled under the twelve headings previously mentioned.

The figures on these twenty-five subjects are kept upon large desk sheets, which are usually divided into twelve sections. It takes many years to accumulate these figures, as they represent slow and careful research. They are the foundation of the entire work, and it is impossible to make practical use of fundamental statistics as a barometric index of the condition of trade excepting in connection with these tables for preceding years and months.

The twelve headings already described are arranged so they may be grouped and classified under the three following divisions. These divisions are purely arbitrary, as every subject affects in some manner each of the three divisions:

Corporations and merchants especially study:
New building and iron production.
Bank clearings.
Business failures.
Labor conditions.
Earnings, crops, politics, etc.

Bankers and others loaning money especially study:
Money conditions.
Foreign trade.
Gold movements and foreign money rates.
Commodity prices.
Clearings, failures, politics, etc.

Stock exchange firms, bond houses and investors especially study:

Prices and transactions
Crop statistics.
Railroad earnings.
Social and political factors.
All figures on mercantile and monetary conditions.

Investors and merchants who carefully study the figures on these subjects each week first reduce them to three barometric index figures, one for each of the above three headings. In addition, these three figures for present surface conditions are averaged and a final summary barometer figure for present surface conditions obtained. Practically speaking, these barometer figures on surface conditions are mathematically correct, being obtained by compiling the actual figures on bank clearings, money rates, stock exchange prices, transactions, etc., comparing them with certain scales of measurement and averaging the final results. These figures, therefore, are not a matter of opinion, and any two persons using the same scale[2] would arrive at the same conclusion. The main use of the summary barometer figures is to plot the "area" mentioned earlier in this article; but these figures are also interesting for other purposes. If, for instance, during a period of depression the summary barometer figures for a long period of weeks show a continuous but slow increase, the country is usually facing improved conditions, however poor business may appear to the average merchant. On the other hand, if during a period of great prosperity, the barometer figures for surface conditions continue to increase, there is liable to be a change for the worse at any time. Also the greater the difference between the respective barometer figures, the sooner the change may be expected.

But in addition to collecting statistics each week or month from which to deduce barometer figures, bankers and merchants have the monthly figures, on each of the twenty-five or more subjects mentioned above, interpreted each month for what they signify. Such interpretations are made in accordance with the rules above referred to, and show how many subjects signify a "continued improvement," how many signify "no improvement," and how many

[2]Moreover, persons using different scales would obtain similar plots. Although their definite figures for each week or month would differ, yet the relation of one week to another should be identical.

signify "no change." Figures on the majority of these twenty-five subjects can be obtained not oftener than monthly, and, therefore, the entire ground need be covered in detail but once each month. As reported, these figures are inserted each month in their respective tables, and in addition to showing present conditions they also serve as a means of making an intelligent estimate of what will be the final or total figures for each of the twenty-five subjects at the end of the current year. This portion of the work is known as the monthly report.

This estimate for the year, which is used when plotting the figures on any one subject, is then compared with the final figures for the preceding years as given under the first-mentioned table; that is, the table showing conditions by years for a considerable period of time. If there has been a normal growth or change—sometimes a favorable showing requires an increase and sometimes a decrease—the figures on a given subject are considered as signifying satisfactory conditions; but if a growth or a change is abnormal, the figures are considered as showing unsatisfactory conditions. In other words, satisfactory conditions require a normal change, and figures of much less than normal or much more than normal are considered unsatisfactory.

The industrial organization of the country is similar to the physical organization of the human body. The individual normally should have a certain appetite and should require a normal amount of food. The normal appetite increases from childhood to youth, and from youth to maturity; but its relation to health is the same. So long as a man regularly eats a normal amount, he continues to increase in strength and vitality; but if he overeats, or is underfed, he ceases to gain strength, his efficiency is reduced, and he becomes subject to attacks of disease. As, therefore, the maintenance of good health requires a certain normal balance, so do the prosperous conditions of industrial life. This, however, does not mean fixed conditions, as in a rapidly growing country like America, the figures to be normal *must increase in proportion as the wealth, population and activity of the country increase.* Great increases or great decreases are distinctly not normal, and are always significant of a marked change; a change for the better in time of depression, when present conditions are very unsatisfactory; or a change for the

worse during a period of prosperity, when present conditions are apparently very satisfactory.

This principle is well illustrated in the case of money rates, for instance. When money rates gradually increase, and surplus reserves gradually decrease after a period of depression, the combination is significant of improved present conditions; when commercial paper is discounted at 3½ per cent., one may always be sure that the country is not prosperous; that many factories are idle and many men out of work. As the mills resume operation, and as business becomes more active, money rates increase and surplus reserves decrease, all of which increase is shown by higher barometer figures for surface monetary conditions. On the other hand, as money rates increase too greatly, and the surplus reserves decrease to very low figures, the change is significant of unsatisfactory future conditions. In other words, when money rates are below normal, business is dull, but may soon be better; and when money rates are above normal, it shows that business is good, but may soon be worse.

Of course, if this data were obtained by each investor, merchant or banking house independently, it would require a force of clerks to collect, analyze and sort the mass of figures, but as the data may now be obtained from a central agency, all of the drudgery is eliminated. The investor or merchant may simply note these barometric indices, as they are made up each week, and thus keep in constant touch with surface conditions, and always know how much of the present period (whether of prosperity or depression) has been consumed. By reference to the tables, the monthly figures may be interpreted once a month in accordance with the rules mentioned. But the average banker, merchant and investor is satisfied to depend upon the barometer figures and reports furnished by the central agency, and does not make a personal examination more than once or twice a year, excepting in times of panic or uncertainty.

But whatever the time or money expended, merchants and investors always obtain great profit from such studies, as they give a clear idea not only of the present surface conditions, but also of underlying conditions, the relation of both to normal conditions, and consequently what may be expected in the future. If, during a period of depression, uncertainty and discouragement, the barometer figures and the charts show distinctly that the country is

about to enter a period of prosperity, investors buy stocks, merchants buy goods, and the banker extends loans. The result is that when prosperity returns, such investors and merchants find that they have purchased very much below the prevailing prices, and obtain many times the profit that they otherwise would.

During a period of great prosperity and extravagance, when everybody is buying goods or securities and there is a general increase of indebtedness, if these barometer figures and charts foretell a change for the worse, such investors sell their securities for cash, such merchants reduce their stock and outstanding credits, and such bankers reduce loans or place a large part of them "on call." These statistics, therefore, not only serve as an insurance against loss, but enable these men to be prepared to take advantage of the very low prices which are sure to recur in the course of a year or two.

The Great Possibilities

First, a word to bankers: Banks have two distinct functions.

(1) They aid in the planning and carrying out of transportation, industrial and commercial enterprises by providing the capital therefor.

(2) They regulate the number and growth of such enterprises by conscientiously increasing or contracting this supply of capital.

The first function is performed by collecting money from a large number of people, known as "depositors," and loaning the same for definite periods through the purchasing of commercial paper and other securities such as few individual depositors would be able to buy extensively. The second function is performed by varying the amount of cash and securities held; for instance, during periods of panic or of depression, when individuals withdraw money from useful channels and withhold cash, it is a bank's duty to give all cash possible by purchasing such good commercial notes and high-grade securities as are selling below their true value. On the other hand, during periods of great prosperity, it is a conservative bank's duty to dispose of a large portion of this commercial paper and these other securities, storing up large cash reserves pending the next period of money stringency and panic conditions.

In this way banks not only can perform a great service to both depositors and borrowers, by combining small sums and loaning them

in safe and profitable channels, but also can act as great regulators and "storage basins" for the entire business community. A bank can store cash during periods of great prosperity, when the public is willing to loan to anybody and buy anything, and then give out such cash during periods of depression when the public refuses to loan solvent borrowers or to purchase even the highest grade securities. For performing these two functions the bank receives a twofold reward; namely, the market rate of interest on the loans and securities held, and also a large profit on the purchase and sale of securities. It not only more fully serves its true purpose in the community, but also makes very much greater profits and assumes much smaller risks.

In other words, such a bank will receive an income of over 4 per cent. upon its investments and a profit of from 10 per cent. to 20 per cent. on their sale, besides being in the strongest possible condition with very large reserves at the time of a crash or money stringency. The use of these barometer figures insures not only the profits of good loans and satisfactory sales, but also it insures the purchase of only the highest grade securities, and indicates the time for disposing of such property before the money is needed for reserve and the accommodation of local customers.

Secondly, a word to merchants: The old plan for corporations and merchants to borrow always about the same amount of money each year, to carry about the same amount of merchandise and to extend about the same amount of credit to customers, is entirely wrong. The most successful corporations and merchants are those who study fundamental statistics and who base their borrowing, their buying and their credit policy on what these figures show. By such a method a merchant knows when underlying conditions are becoming sound and a period of improvement is at hand; while he will reduce loans, dispose of all merchandise possible and decrease the credit extended to customers, when the figures on these subjects show that conditions are becoming unsound, and the country is about to enter a period of high money rates and declining commodity prices.

By studying these underlying conditions he is able to change his position and policy at a time when those who do not possess these figures have not the slightest suspicion that the country is on the verge of a severe panic.

Third, a word to investors: Another poor principle is embodied in the old plan of investing money as accumulated, as well as in all forms of speculation. The safest and most successful method of investing is to watch the barometer figures on the twenty-five subjects mentioned, and then to buy and to sell only when these subjects plainly show which to do, *confining all purchases to the very highest grade securities.* By such a method purchases are made only at the end of a long period of declining prices, after which securities are held from two to four years until the figures on these twenty-five subjects show that prices have about reached the top. Then they are sold, the proceeds reinvested in short-term municipal notes and high-grade bonds maturing in from one to three years, or else deposited in banks. During these years a panic invariably comes when this money will again purchase, at from 20 per cent. to 50 per cent. less price, the same high-grade securities that were sold a few years previous.

By this process an investor averages an annual income of about 8 per cent. from money invested in the highest grade bonds, and about 16 per cent. from money invested in the highest grade stocks. Moreover, he is always in an impregnable position with large cash assets whenever trouble comes, while *this method eliminates all necessity for borrowing or purchasing on margin.* Of course, if this method contemplated purchasing anything but the highest grade securities, it would simply be one form of speculation; but considering the character of securities purchased, this is a much more conservative method than to purchase the investments whenever one has idle money, irrespective of conditions, either for permanent investment or to sell again, which is the method followed by those who do not possess and study these figures.

Fourth, a word to brokers and bond dealers: During eleven years given exclusively to work for the largest bond and stock exchange firms, the author found that some firms are always prepared for every change in monetary and investment conditions, and universally profit thereby—while others are often unprepared and either sustain losses or are handicapped by heavy commitments. Moreover, in nearly every case, I found that these most successful firms gave much study to fundamental statistics and planned their business policy in accordance with what such statistics foretold.

Firms who have watched these figures during the past years

have always been prepared for every period of high prices by having previously purchased large amounts of long-term bonds at low prices. As money rates have increased, such firms and their customers have gradually reduced their loans and changed securities. By such a policy they are always able to trade at the market and still make a profit. When these figures have foretold a coming period of money stringency, such firms have purchased and recommended only short-term notes and bonds maturing within one or two years, which insures that they and their customers will at critical times have large cash balances in order to take advantage of every period of low prices. Such firms not only make great profits, while at the same time they are keeping themselves in an impregnably strong financial condition, but create a most loyal and valuable clientele.

Many firms do not become interested in short-time notes until money rates are high and investors should be buying long-term bonds. Of course, this is the time for corporations to become interested therein; but not bond dealers, who should purchase and recommend short-time notes before money rates are high and when bonds are selling at top prices.

Some bond dealers may object to this policy and discourage customers from "taking profits" on bonds, but urge them to hold all bonds until maturity. Aside from this policy being unfair to the investors, we know that some, considering even their 10 per cent. profit, make much less money during a long period of years than if they would adopt the more honest policy and sell more active and high-grade bonds, even although the profits are very much less. The reason for this is that in the latter case they would have many more opportunities to reinvest a given amount of money, making several small profits instead of one large profit, and in addition always have the undivided good-will of the customer.

Once men were needed who were willing to give their lives for their country; but such time is now past. To-day men are needed who are willing to give their country the benefit of their study, judgment and power. But for some reason men seem much less willing to give the latter. Many men, willing to go to battle and give their lives for their country, are utterly unwilling to loan a small portion of their capital. Many men, willing to expose themselves to the bullets of an enemy, when occasion calls, are utter

cowards when it comes to the great affairs of commerce and industry.

Nevertheless, the ultimate prosperity of this country depends, to a large extent, upon whether or not we take the time to watch and study underlying conditions, using our influence in keeping our country in a normal, healthy state. Our nation is like a boy, needing to be strengthened and encouraged during days of trouble and depression, and curbed and checked during days of strength and prosperity. Instead, however, of helping the nation, ninety-nine out of every hundred men follow the crowd or float with the current, becoming discouraged during days of adversity and reckless during days of prosperity.

For this reason, therefore, above all other reasons, I write so earnestly relative to this work. America wants men who are willing to enlist as soldiers—not to kill and destroy—but to study fundamental conditions, and to help hold throttles of the great engines of progress upon which this country so absolutely depends. Each individual who reads this article has the power of making the next panic less severe and the next period of prosperity less reckless, and whether or not we accept this trust, or instead allow ourselves to be swept along with the great majority, decides whether we are to be a benefit or an injury to our country—whether our nation is truly better or worse by having us as citizens.